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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,123	04/07/2006	Herminio Navalon Carretero	HERR 22.502(100700-00162)	9214
26304 7590 07/20/2009 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER COLEMAN, KEITH A	
			ART UNIT 3747	PAPER NUMBER
			MAIL DATE 07/20/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,123	Applicant(s) NAVALON CARRETERO, HERMINIO	
	Examiner KEITH COLEMAN	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 1, 4, 6, 7-10, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al., (US Patent No. 4,391,132) in view of Andrews et al. (US Patent No. 5,482,013)

With regards to claims 1 and 20, the patent to Egami et al. discloses a module (9) for heating the intake gases of an internal combustion engine (Col. 1, Lines 1-6, Fig. 1), **the module comprising**; electronic temperature control (15) (Figure 4) which is used for heating the gases circulating through the intake pipe (3) by means of a heating element (10) connected to a battery (17, Figure 1) from which it receives a supply via a power control circuit (105) controlled by an electronic control unit (ECU) (16) of the engine (1), **the frame to which** the power control circuit is adhered (15), and - the heating element (10), consisting of a least one heating resistance (10), is installed (Fig. 1), both forming the same module to allow electronic control of the temperature of the intake gases (Fig. 1) , the patent to Egami et al. discloses a module (9) for heating the intake gases of an internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the power control circuit incorporates essentially a control logic (15, Figure 4), to which is connected a temperature sensor (12 and 11), and at least one power switch (107) which controls the heating element (10) except positively disclosing wherein the power control circuit comprises a control logic to which is connected to a single temperature sensor, and at least one power switch which controls the heating elements.

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The patent Andrews discloses wherein the power control circuit comprises a control logic (12) to which is connected to a single temperature sensor (20), and at least one power switch which controls the heating elements (26 and 28).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the circuit of Egami et al. with wherein the power control circuit comprises a control logic to which is connected to a single temperature sensor, and at least one power switch which controls the heating elements in view of the teaching to Andrews et al., in order to supply heated air to the internal combustion engine (Col. 3, Lines 20-30 from Andrews)

With regards to claim 4, the patent to Egami et al. discloses a module (9) for heating the intake gases of internal combustion engine (1), incorporating an electronic temperature control (15) (Figure 4), according to claim 2, characterized in that the power control circuit (105) is provided with a power switch (107) for each of the heating resistances configuring the heating element (10).

With regards to claim 6, the patent to Egami et al. further discloses a module (9) for heating the intake gases of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the temperature sensor (10) is thermally connected to the frame (9), since it is integrated in the actual power control circuit (105) to provide the temperature control (15).

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With regards to claim 7, the patent to Egami et al. further discloses a module (9) for heating the intake gases (3) of internal combustion engine (1), incorporating an electronic temperature control (16), according to claims 1, characterized in that the temperature sensor (11 and 12) is inserted in the wall of the intake manifold (3) for providing the temperature control (16).

With regards to claim 8, the patent to Egami et al. discloses a module (9) for heating the intake gases (3) of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the temperature sensor (11 and 12) is integrated in the heating element (10) for providing the temperature control (16).

With regards to claim 9, the patent to Egami et al. discloses a module (9) for heating the intake gases (3) of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1 and further discloses that the temperature sensor (11 and 12) is located downstream from the heating element (10). (Col. 2, Lines 36-46)

With regards to claim 10, the patent to Egami et al. discloses a module (9) for heating the intake gases of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the heating element (10) consists of at least one resistance of the strip type (Col. 2, Lines 36-46)

5. Claims 3, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013) in view of Thimmesch et al, (Patent Publication 2002/0096155 A1).

With regards to claim 3, the patent to Egami et al meets the limitations of claims 1 and 2. Egami et al does not further disclose that the power control circuit (105) is mounted on a ceramic base adhered with a heat conducting product to the frame itself.

Thimmesch et al. discloses a module for heating the intake gases of an internal combustion engine mounted on a ceramic base (48) adhered with a heat-conducting product to the frame itself (Paragraph 22). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the heating module of Egami et al. with the ceramic base in view of the teaching to Thimmesch et al., in order to insulate the circuits from the heat radiating from the heating elements. Egami et al. and Thimmesch et al. are analogous art because they are from the same field of endeavor of heaters. The suggestion/ motivation would have been that an insulator may be formed of a ceramic material known in the art to provide the desired thermal and electrical insulating properties. Insulator includes cavities to accommodate and position heating element therein (Thimmesch, Paragraph 22).

With regards to claim 11-12, the patent to Egami et al. discloses all the limitations of claim 10.

Egami et al. does not disclose the heating elements characterized in that there are separate ceramic insulants for each resistance and that the ceramic insulants form a single monobloc part, which includes all the resistances.

The patent publication to Thimmesch et al. discloses a module according to claim 10, characterized in that there are separate ceramic insulants (11) for each resistance. (Paragraph 22, Fig 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the heating element of Egami et al. with ceramic insulants and combine the insulants into a monobloc in view of the teaching to Thimmesch et al., in order to use the desired thermal and electrical properties normally found in ceramics (Thimmesch et al., Paragraph 22).

6. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013)

With regards to claim 5, the patent to Egami et al. discloses a module (9) for heating the intake gases of internal combustion engine (1) of claim 2 [interpreted to be claim 1], wherein the power control circuit (105) runs a supply connection which is led to the positive terminal of the battery (17), wherein an electrical conductor which connects it to the heating element (10), and a control connector (15) which transmits the

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temperature signals picked up by the temperature sensor (11 and 12) to the electronic control unit (16) of the engine (1), which responds by transmitting signals to the control circuit for regulating the power applied to the heating element (10) via the control logic (15) and the power switches (107) (Fig 1, Col. 5, Lines 39-64).

Egami et al. does not disclose **the heating element being** connected to the earth of the metal frame at its other end. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the ground of Egami et al. with the earth, in order to complete the circuit.

With regards to claim 18, the patent to Egami et al. discloses all the limitations of claim 5 and further discloses that the electrical conductor (10b) is integrated and hermetically sealed (10a) inside the module (9) to prevent tampering and possible supply of the heating element (10) from the outside. It should be noted that printed plates seal the wire strips.

7. Claims 13-14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013) in view of Sadr, (US Patent No. 5,445,782).

With regards to claims 13, 14 and 19, the patent to Egami et al. discloses all the limitations of claim 1. Egami et al. does not disclose said module has been installed in

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manifolds composed of materials with a low operating temperature or furthermore, that it is installed in a plastic intake manifold.

The patent to Sadr discloses a low operating temperature manifold and a plastic intake manifold (Col.5, Lines 30-39). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the material of the manifold of Egami et al. with a low temperature manifold or plastic intake manifold in view of the teaching to Sadr, in order to use low temperature operating materials such as plastics because of their beneficial characteristics such as lighter weight and easier and cheaper to manufacture compared to metals. In addition, because of the characteristics of modern plastics, more and more automotive parts are being produced using plastic (Sadr, Col.1 Lines 20-25). Both Egami et al. and Sadr are analogous art since they both are in the endeavor of inlet manifolds.

8. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013) in view of Prust, (US Patent No. 6,152,117).

With regards to claim 15, the patent to Egami et al. discloses all the limitations of claim 1. Egami et al. does not disclose that the frame is of metal, preferably aluminum. Prust discloses that the frame is of aluminum metal (Col. 2, Lines 64-68 through Col. 3, Lines 1-7). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the frame of the Egami et al. with metal or aluminum

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in view of the teaching to Prust, in order to use the desired thermal and electrical properties normally found in aluminum.

With regards to claim 16, the patent to Egami et al. discloses all the limitations of claim 7. Egami et al. does not further disclose that the connection of the temperature sensor to the control circuit is made by means of cables. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute the connecting element between the temperature sensor & control circuit of the Egami et al. with cable, in order to complete the circuit between the temperature sensor and the control circuit.

With regards to claim 17, the patent to Egami et al. discloses all the limitations of claim 16. Egami et al. does not further disclose using a connector between the cable and temperature sensor. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the connecting element between the cable and temperature sensor of the Egami et al. with a connector, in order to complete the circuit between the cable and temperature sensor.

Response to Arguments

1. Applicant's arguments filed 5/26/2009 have been fully considered but they are not persuasive.

Applicant's Arguments

Rejections under 35 U.S.C. §103(a)

Independent claim 1 and dependent claims 4, and 6-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,391,132 to Egami in view of Andrews. Claims 3, 11, and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Egami in view of Andrews and U.S. Patent Publication 2002/0096155 to Thimmesch et al. Claim 5 and dependent claim 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Egami in view of Andrews. Dependent claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Egami in view of Andrews and U.S. Patent No. 5,445,782 to Sadr. Claims 15- 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Egami in view of Andrews and U.S. Patent No. 6,152,117 to Prust.

The rejections are respectfully traversed for the reasons given below. None of the cited art alone or in the combination suggested teaches, discloses, or suggests the claimed invention.

[1]1. The cited art does not teach, disclose, or suggest a control circuit having a power switch wherein the power switch controls at least at least one resistance strip.

With respect to independent claim 1, Egami is cited for teaching all limitations of the claimed invention except for a power control circuit that comprises a control logic to which a single temperature sensor is controlled and at least one power switch which controls the heating element. Andrews is cited to fill the gap.

Specifically, Andrews is alleged to teach 'a control logic 12 connected to a sensor 20 and at least one power switch which controls" the heating elements" 26 and 28.

'However, as is evident from 12:14 et al. Andrews teaches a controller that uses the intake manifold temperature sensor (IMATS) 20 in algorithm. For example, as disclosed in Table 1 and 12:28 et al., if the air temperature is less the zero degrees F, the heaters are energized. If the condition persists, the user is asked to wait so that the gases may be sufficiently heated. 12:57-60.

In contrast, the presently claimed invention is directed to avoiding excess temperatures that may destroy a plastic manifold into which the presently claimed module's heating element may be installed. Thus, rather than controlling the heating element via the control unit in order to cut off excessive heating, Andrews teaches that the control unit via an algorithm provides the reverse, heating the intake gases to make the engine even hotter. In fact to do so, Andrews requires a complex relay switching means, which is simply not necessary in the presently claimed invention.

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Egami fails to fill the gap or permit one skilled in the art to adapt the Andrews to a different outcome to anticipate or render the presently claimed invention obvious.

Accordingly, the Examiner is respectfully requested to withdraw the rejection.

[2]2. The cited art does not teach, disclose, or suggest that the heating element comprises at least one resistance ribbon strip. Egami is alleged to teach such a heater element at 2:36-46. Rather than being a ribbon and having the inherent advantages of such, Egami only teaches a platinum wire, which is illustrated in Figs. 2 and 3. This wire as illustrated in contained in a frame and is not a ribbon. Andrews fails to fill the gap or permit one skilled in the art to adapt the reference to a different outcome.

Accordingly, the Examiner is respectfully requested to withdraw the rejection.

[3]3. None of the cited art teaches a heating module in combination with a plastic manifold. Neither Egami nor Andrews has recognized the need to avoid having temperatures beyond excess in order to avoid destroying a plastic manifold. This risk is minimized by implementing a temperature control as claimed in the present invention. Advantageously, this permits the use of more economical plastic manifolds rather than metal manifolds.

Neither Egami nor Andres teach a module in combination with a plastic manifold. Accordingly, the Examiner is respectfully requested to withdraw the rejections.

All dependent claims are allowable for at least the same reasons as the independent claim from which they depend.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Examiner's Response to Arguments

With regards to Applicant's first argument, the combination of Egami and Andrews clearly shows Applicant's claimed subject matter. Since the patent to Andrews discloses wherein the power control circuit comprises a control logic (12) to which is connected to a single temperature sensor (20), and at least one power switch which controls the heating elements (26 and 28), it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the circuit of Egami et al. with wherein the power control circuit comprises a control logic to which is connected to a single temperature sensor, and at least one power switch which controls the heating elements in view of the teaching to Andrews et al., in order to supply heated air to the internal combustion engine (Col. 3, Lines 20-30 from Andrews)

With regards to Applicant's second argument, the patent to Egami discloses the heating element (10) consists of at least one resistance of the strip type (Col. 2, Lines 36-46).

With regards to Applicant's third argument, the patent to Sadr discloses a low operating temperature manifold and a plastic intake manifold (Col.5, Lines 30-39). This disclosure recognized the need to avoid having temperatures beyond excess in order to avoid destroying a plastic manifold and the use of more economical plastic manifolds rather than metal manifolds.

As such, this action is made final.

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 5:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571)272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAC
/K. C./
Examiner, Art Unit 3747

/Stephen K. Cronin/
Supervisory Patent Examiner, Art Unit 3747

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